



# Stitchless Fabrication System

## What It Is:

Sewing is the best mechanical way to join two pieces of fabric, but each stitch can damage the material. So what are the alternatives? We're exploring new "stitchless" ways to make seams and bond textiles.

## Why It's Needed:

We needed to make seams that would be as strong as the fabric — and that would provide a hermetic seal in any environment, from desert to arctic.

## How It Works:

**Some Emerging Technologies:** Fusion means joining two pieces of fabric by melting. We're using ultrasonics — extremely fast vibrations that cause materials (100% synthetic, or blends with up to 40% natural fibers) to heat up and fuse together, creating a strong seam. Adhesives are applied wet to cover a fabric's whole surface, then dried to form a strong, solid bond. Adhesives — like fast-drying "hot melts" — can work so well that the fabric will break before the seam.

## Benefits:

**Low Costs...**We keep the cost of labor down by seeking the simplest alternative to sewing.

**Reduced Bulk...**Stitchless fabrication cuts down on the heavy layers of fabric at the seam, making the final product strong and light.

**Faster Production...**Stitchless techniques save time, particularly on repairs.

## Point of Contact:

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